

WHAT IS CLAIMED IS:

1. An apparatus for the enhancement of fusion of at least two adjacent vertebrae comprising:

at least a superior and an inferior endpiece, wherein said superior endpiece is adapted to be affixed to a superior vertebral body, and said inferior endpiece is adapted to be affixed to an inferior vertebral body;

a compressible portion located between said superior and inferior endpieces.

2. The apparatus of Claim 1, wherein the compressible portion comprises a sliding mechanism.

3. The apparatus of Claim 2, wherein the sliding mechanism further comprises a parallel set of mating arms, wherein each mate within each set slides relative to the other mate.

4. The apparatus of Claim 4, wherein the sliding mechanism further comprises:  
a first slider and a second slider, wherein said first and second slider have approximately U-shaped geometry, and each slider further comprises:

a first arm,

a second arm, and

a back, wherein said first arm and said second arm of each slider are parallel, wherein said first arm of said first slider mates with said second arm of said second slider, and said second arm of said first slider mates with said first arm of said second slider, such that said backs of said sliders are positioned parallel to each other, wherein each back of each slider is joined to an endpiece,

a plurality of teeth located on at least one of said first arms, wherein said teeth face towards said second arm of the same slider piece,

a gear engaged with said plurality of teeth, wherein rotating said gear moves the arms within each set of mating arms relative to each other, positioning the apparatus into a compressed arrangement.

5. The apparatus of Claim 4, further comprising a housing, wherein said housing further accommodates said sliders and said gear.

6. The apparatus of Claim 4, further comprising a lock to secure the apparatus in a compressed configuration.

7. The apparatus of Claim 4, wherein each back of each slider is integral to an endpiece, thereby joining the slider and endpiece.

8. The apparatus of Claim 4, wherein each back of each slider comprises a flange that fits within a port in each endpiece, thereby joining the slider and endpiece.

9. The apparatus of Claim 4, further comprising a fixing plate, wherein said fixing plate is located between said superior and said inferior endpieces and is positioned and configured to be affixed to an intermediate vertebral body located between said superior and said inferior vertebral bodies.

10. The apparatus of Claim 9, wherein the fixing plate is located between and connected to said mating arms of said slider pieces.

11. The apparatus of Claim 1, wherein the plate is contoured to accommodate lordosis.

12. The apparatus of Claim 1, wherein the apparatus is made of a bioabsorbable material.

13. The apparatus of Claim 1, further comprising a superior and an inferior endpiece, wherein said superior and said inferior endpieces are adapted to be affixed to superior and inferior vertebral bodies, respectively;

at least one intermediate endpiece, wherein each said intermediate located between two endpieces, wherein one endpiece is superior to and the other endpiece is inferior to said intermediate endpiece, and wherein said intermediate endpiece is adapted to be affixed to a vertebral body intermediate said superior and said inferior vertebral bodies, and wherein said intermediate endpiece is connected to each said adjacent endpieces via a compressible device.

14. A method of enhancing fusion between vertebral bodies comprising:  
accessing a spinal portion;  
affixing respective endpieces to superior and inferior vertebral bodies;

adjusting the distance between said endpieces into a compressed position; and  
locking said apparatus in the compressed position.

15. The method of Claim 14, wherein adjusting the distance between said endpieces further comprises sliding each mate in a set of mating arms relative to each other.

16. The method of Claim 15, wherein sliding each mate in a set of mating arms relative to each other further comprises turning a gear engaged to a plurality of teeth on at least one arm within at least one set of mating arms.

17. A method of enhancing fusion in a multilevel vertebral fusion comprising:  
accessing a spinal portion;  
removing some or all of at least two spinal disks;  
affixing respective endpieces to superior and inferior vertebral bodies;  
affixing at least one intermediate endpiece to an intermediate vertebral body between said super and inferior vertebral bodies;  
adjusting the distance between said endpieces into a compressed position; and  
locking said endpieces in the compressed position.

18. A method of manufacturing an apparatus for the enhancement of fusion between at least two adjacent vertebrae comprising:

attaching a compressible coupling to a superior and an inferior endpiece, wherein said superior and inferior endpieces are adapted to be affixed to a superior and an inferior vertebral body, respectively.

19. The method of Claim 18, wherein said compressible coupling comprises a sliding mechanism.

20. The method of Claim 18, wherein said compressible coupling comprises a parallel set of mating arms, wherein each mate within each set slides relative the other mate of said set.

21. The method of Claim 18, wherein said compressible coupling comprises:  
a first arm;  
a second arm; a back  
a back, wherein said first arm and said second arm of each slider are parallel, wherein said first arm of said first slider couples with said second arm of said second

slider, and said second arm of said first slider couples with said first arm of said second slider, such that said backs of said sliders are positioned parallel to each other, wherein each back of each slider is joined to an endpiece;

a plurality of teeth located on at least one of said first arms, wherein said teeth face towards said second arm of the same slider piece; and

a gear engaging said plurality of teeth, wherein turning said gear brings said backs of said sliders closer together into a compressed position.

22. An apparatus for the enhancement of fusion of at least two adjacent vertebrae comprising:

at least a superior and an inferior endpiece, wherein said superior and said inferior endpieces are adapted to be affixed to superior and inferior vertebral bodies, respectively; and

means for decreasing the distance between said endpieces to bring the apparatus into a compressed arrangement.

23. An apparatus for the enhancement of fusion of at least two adjacent vertebrae comprising:

at least a superior and an inferior endpiece, wherein said superior and said inferior endpieces are adapted to be affixed to superior and inferior vertebral bodies, respectively; and

a compressible portion, wherein the compressible portion further comprises:

a parallel set of mating arms; and

a means for sliding each arm within each set of mating arms relative to the other mate within the set, thereby decreasing the distance between said endpieces, bringing the apparatus into a compressed arrangement.

24. The apparatus of Claim 23, further comprising a means for securing the apparatus in a compressed arrangement